--~~53~~ 49. A system as claimed in claim 1, wherein said electronic display means comprises means for displaying analyses of said responses to said student tasks.--

IN THE ABSTRACT:

Page 51, line 10, after "AT" insert --(tm)--.

REMARKS

Claims 1-10, 14-23, and 25-53 presently are pending in this application, claims 11-13 and 24 having been cancelled, and claims 37-53 having been added to claim the disclosed invention more completely. The added claims are believed free of deficiencies under 35 U.S.C. §112. No new matter has been added.

Claims 11-13, 20, 23, 24, 26, and 33-35 stand rejected under 35 U.S.C. §112, second paragraph. Claims 11-13 and 24 have been cancelled. The remaining claims have been amended in a manner believed fully responsive to all points raised by the Examiner. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1-9, 14-16, 18, 21, and 27-35 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S.P. 3,647,926 (Rohloff). Claims 11-13, 17-20, 23, 24, 26, and 36 stand rejected under 35 U.S.C. §103 as unpatentable over Rohloff. Claims 10 and 22 stand rejected under 35 U.S.C. §103 as unpatentable over Rohloff in view of U.S.P. 4,764,120 (Griffin). Claims 1, 4-10, 14-22, 25, and 27-35 stand rejected under 35 U.S.C. §102(b) as anticipated by Griffin. Claims 2, 3, and 33-35 stand rejected under 35 U.S.C.

§103 as unpatentable over Griffin in view of Soviet Publication No. 0736158 (Soviet '158) or Rohloff. These prior art rejections are respectfully traversed, and are believed to be overcome further by the foregoing amendments to the claims. Applicants respectfully request reconsideration and allowance of the pending claims in view of the following arguments.

In response to the Examiner's objection to the specification under 35 U.S.C. §112, first paragraph, Applicants have the following comments. First, regarding the use of trademarks in the application, appropriate amendment to the specification has been made.

Regarding the remainder of the §112 objection, to answer the Examiner's first question, it is indeed possible for a particular program, which is downloaded from the central computer to each of the student terminals, to move on to subsequent questions before the overall time period expires. For example, a teacher might allow 30 minutes for an exercise containing 10 questions (i.e. an average of three minutes per question). Some students will be able to answer questions faster than others, and thus will take less than three minutes for some questions. Those students will be able to go on to subsequent questions, some of which may take them more than three minutes to answer. All the program would do is to keep track of the overall time remaining, and in response to a student's answer to a particular question, to allow the student to select another question so long as there is time remaining.

Thus, the control of pace by the students refers to nothing more than a student's ability to select another question or questions while fellow students are working on other questions. The teacher's control of the pace refers to a time limit which is set. This setting of a time limit may include a requirement that all students finish a particular task before moving on to the next task. The application discloses, in Figure 4DD for example, how a teacher can monitor how many students have answered a particular question, and how many still have not answered. In order for the system to wait for all students to finish, it might simply require that all students register answers, as shown in the just-referenced Figure.

The teacher's control of pace may require students to work on the same task at the same time, without moving on to different tasks. This is what the inventors contemplate as "proceeding in lockstep". This may or may not be "substantially simultaneously", but it may be, for example, within five minutes (assuming a five-minute time limit for completion of a given task). The teacher also may divide the class into groups; the control pace then would apply to individual students or student groups, rather than to the class as a whole.

Turning now to the prior art rejection, it should be noted at the outset that the invention is directed to an interactive electronic classroom system which enhances significantly the ability of students to participate in class, and the ability of the teacher

to receive feedback on this participation. An important structural feature which enables the invention to achieve its goal is the provision of a microprocessor in each of the student terminals.

One significant result of the use of microprocessors in the student terminals in the invention is that, unlike the Rohloff and Griffin patents, and the Soviet '158 publication on which the Examiner relies, all of these references employing little more than simple keypads for providing responses to multiple-choice type questions, the student terminals in the invention enable far more complicated, even narrative-type responses, to various questions and tasks which the teacher may give to the students. The desirability of having students be able to provide such responses is not even remotely suggested by these references. It is noted that this feature is recited more specifically in new claim 41. Claim 1 recites generally the use of a microprocessor in each of the plurality of student terminals.

Another result of the use of microprocessors in the student terminals in the invention is the ability of each student to run the same didactic program independently, within the same time limit, with analyses of class responses being presented to the teacher (such examples are mentioned, inter alia, on page 33 of the specification, wherein for example a didactic program might teach current flow in an electrical circuit, or heat conduction in a bar).

One advantage that the invention gives to the design of didactic software is the provision of a context within which small segments of didactic software with a limited pedagogical aim can be integrated more easily into a curriculum, and used and controlled more easily by a teacher.

Other claims recite additional functions which the student terminals may perform. Claim 44 recites a number of functions which are made possible by the use of a microprocessor in the student terminals. Claim 50, which recites more specifically the electronic display means, refers to the use of student displays to enable the teacher to display information to each of the students. Such a display, particularly where something fairly sophisticated is shown, requires microprocessor control at each of the student terminals.

As described in the specification, it is within the inventors' contemplation to include anything from a pocket organizer type of electronic device, to a full-fledged personal computer, portable or not, as a student terminal. The use of a microprocessor in each student terminal enables the student terminals to behave in an interactive way unknown in the prior art.

Claim 52, which refers to the use of the microprocessor as a microcontroller in connection with the network means, also sets forth a feature which none of the prior art of record even remotely suggests.

Looking now at the prior art on which the Examiner expressly relies, Rohloff is directed to a rudimentary teaching system in which students use simple keypads to provide answers to true/false and multiple-choice questions. There is no computer at all in Rohloff, and no facility whatsoever in the devices which the Rohloff students use that is even remotely capable of receiving downloaded programs, or providing a narrative response, or displaying information from a teacher's computer. The Soviet '158 reference is believed to be similarly deficient, though the undersigned relies for this statement solely on the drawings and English language abstract of Soviet '158, the undersigned being unable to discern any teachings from the Soviet '158 reference based on the Russian language text.

Griffin, being a more recent reference than Rohloff, shows some more sophisticated features, such as the monitoring of students as they log on to the system. However, Griffin only contemplates multiple-choice type exams. Also, it should be noted that Griffin is directed to a very different goal -- namely, the monitoring of events in different classrooms. Griffin, like Rohloff and Soviet '158, is not primarily concerned with increasing the extent to which students can particpate in class via electronic means. Further, neither Griffin, nor Rohloff, nor Soviet '158 includes any means for showing students an analysis of their responses.

It also should be noted that while other references, such as U.S.P. 4,715,818 (Shapiro) and U.S.P. 4,759,717 (Larochelle) involve the use of computers at student terminals, the degree of interaction contemplated and claimed in the present application is neither taught nor even remotely suggested by these references. Shapiro does disclose (see, e.g., col. 2, line 10-19) the selective connectability of a teacher's video monitor to the video monitors of each of the student computers, so that students all can see what is displayed on the teacher's computer. However, Shapiro is directed to teaching students how to use computer hardware and software per se, and to enabling a teacher to monitor a student's progress in working on a particular lesson of this type. Also, Shapiro is not intended for use in an ordinary classroom, nor is Shapiro directed to having the students be able to provide responses of varying types, including narrative responses, to the teacher for analysis, grading, and/or feedback purposes. Further, Shapiro does not teach or suggest having programs executable at student terminals for providing such feedback (such as claimed more specifically, for example, in claim 45 of the present application), and the type of teacher supervision is totally different.

Larochelle describes (see, e.g., col. 3, line 16 to col. 4, line 7) a system wherein any computer (be it a student computer or the teacher's computer) within a closed loop network can act as a source for video information which all of the other computers, acting as targets, can monitor. Larochelle thus shows a system

wherein students can transmit video information to each other. However, Larochelle is deficient in the same ways that Shapiro, and the rest of the prior art is deficient.

As discussed previously, claim 1 in the application recites, inter alia, the provision of student terminals which include a microprocessor, and the capabilities of distributed processing of student tasks that are transferred over the system network. This distibuted processing enables far greater flexibility in student tasks, and in enabling a greater degree of electronic interaction between teachers and students than previously was possible. The above-referenced dependent claims recite specific manifestations of this enhanced flexibility. Consequently, pursuant to the foregoing discussion, Applicants submit that all of claims 1-10, 14-23, and 25-53 are patentable.

The Examiner's rejections having been overcome, Applicants submit that the subject application is in condition for allowance. The Examiner is requested to contact the undersigned at the local telephone number listed below to discuss other changes deemed necessary.

Respectfully submitted,

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Date: April 25, 1990